who informed me that it had been taken by a bird-catcher in his nets at Elstree Reservoir on Saturday, November 19. I received the bird in the flesh from Mr. Burton, along with a specimen of Reed-Bunting (*Emberiza schœniclus* ♀), also in the flesh, for comparison. Lt.-Col. Irby called shortly after I had received these birds, and we examined this specimen together, and had the advantage of comparing it with a large series of Buntings in the collection of Mr. H. E. Dresser and with some in my own collection. We came to the conclusion that it is a Rustic Bunting (*Emberiza rustica*), of which species only one specimen has hitherto been recorded as having been met with in Great Britian. Our opinion was subsequently confirmed by yourself, who saw the bird in the flesh, and since that time by Mr. H. E. Dresser.

"Mr. Burton informs me that the bird is a male by dissection; and I think that it is undoubtedly a bird of the year."

The Rev. H. H. Slater, F.Z.S., exhibited an example of a Shrike killed near Spurn Point in Yorkshire, which was believed to be referable to *Lanius major* of Pallas, or to a dark variety of *L. excubitor*.

Dr. A. Günther, F.R.S., exhibited on behalf of Sir J. W. P. Campbell Orde, Bart., F.Z.S., a specimen of a Charr (*Salmo alpinus*) which had been obtained in a loch on North Uist, Hebrides, being the first specimen ever obtained in this loch, and the third known to have been obtained in the island.

Prof. Flower exhibited a photograph (presented to the Society by Mr. James Farmer, F.Z.S.) of Seal Point, Farallone Islands, off the coast of California, showing the immense number of Sea-lions (*Otaria gillespii*) frequenting that locality.

Mr. P. H. Carpenter exhibited and made remarks on some microscopical preparations of *Antedon eschrichti*, in which a nervous plexus derived from the fibrillar envelope of the chambered organ was visible at the sides of the ambulacra of the disk.

The following papers were read:—

1. On the Whales of the Genus *Hyperoodon*.

By William Henry Flower, LL.D., F.R.S., P.Z.S., &c.

[Received November 28, 1882.]

Apart from that indicated by the waterworn and imperfect cranium from Australia, brought before the notice of the Society in May last[1], but one species of the genus *Hyperoodon*, as constituted by Lacépède[2], has been generally recognized. This has long been known under various specific names—*H. rostratus*, *bidentatus*, *diodon*,

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[1] See P. Z. S. 1882, p. 392.

[2] Histoire naturelle des Cétacés. Tableau des Ordres &c., p. xliv (1804).

bidens, butskopf, dalei, borealis, &c.[1]; and, though allied to *Berardius, Mesoplodon,* and *Ziphius,* and also, though less closely, to *Physeter,* its strongly marked differential characters have, since the early part of the century, thoroughly established its generic isolation.

It is well known to pass the summer months in the Arctic Seas which lie to the north of the Atlantic, and to migrate southward in the autumn, although its actual winter quarters do not seem to have been ascertained. Scarcely a year passes without one or more specimens having been taken or stranded on some part of the coasts of the British Isles, usually in the months of September and October. Similar captures have also been recorded upon other parts of the coasts of Eastern Europe, such as Norway, North Germany, Holland, and the north of France. From this point they seem to leave the shore; for no authentic instances are recorded of their occurrence on the west coast of France, or of Spain, or in the Mediterranean. Most of the specimens thus seen, or at all events taken, are solitary individuals, generally young; but not unfrequently two are met with together, an adult female accompanied by her young, the former often falling a victim to her maternal solicitude for the welfare of the latter.

Of the external characters of this common form of *Hyperoodon,* which usually attains a length of from 20 to 25 feet, many descriptions and drawings have been published; and there are few osteological museums of any importance which do not possess a skeleton of it. The earliest figure, made with really scientific accuracy, is that published by John Hunter in the 'Philosophical Transactions' for 1787, from the individual (a female 21 feet long) taken in the Thames in 1783, the skeleton of which is still preserved in the Museum of the Royal College of Surgeons.

Hunter, in his classical memoir on the Cetacea, says, speaking of this specimen:—"The one which I examined must have been young [as is proved by the condition of the skeleton]; for I have a skull of the same kind nearly three times as large, which must have belonged to an animal thirty or forty feet long." This skull has unfortunately not been preserved; but portions, evidently belonging to the same individual, are still in the Museum. Of these the anterior part of the lower jaw, of great density and containing the two teeth, the great age of which is attested by the solid condition of their bases, was catalogued by Professor Owen as that of an "immature" animal[2].

No notice appears ever to have been taken of Hunter's reference to this large specimen, or of the existence of any form of *Hyperoodon* different from that commonly known, and of which more detailed descriptions were given by Vrolik[3], Wesmael[4], Eschricht[5], Thompson, and others, until Dr. Gray, in the 'Zoology of the 'Erebus' and 'Terror'' (1846), described and figured a cranium, received into the British Museum from the Orkneys, as that of a distinct species, which he named *Hyperoodon latifrons* (p. 27 and plate 4). The diagnostic character is:—"Skull large, heavy, solid, the reflexed part of the maxillary bones very thick and thickened internally, so as nearly to touch each other in front of the blower, much higher than the hinder part of the skull;" whereas of *H. rostratus* it is stated that "the elevated plates of the maxillary bones are thin, leaving a broad space between them in front of the blowers, and as high as the frontal crest."

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[1] *Balæna rostrata,* Chemniz, Beschäft. der Berlin. Gesellschaft Naturforscher, iv. p. 183 (1779); *Delphinus bidentatus* and *Delphinus butskopf,* Bonnaterre, 'Cétologie,' p. 25 (1789); *Delphinus diodon,* Lacépède, 'Hist. nat. des Cétacés," p. 309; and *Hyperoodon butskopf,* idem, ibid. p. 319 (1804).

[2] Descriptive Catalogue of Osteological Series, vol. ii. no. 2480 (1853).

[3] Nat. Verhand. Maatsch. Haarlem, 2. Verz., D. 5 (1849).

Nouv. Mém. de l'Acad. Roy. de Bruxelles. xiii. 4. p. 1 (1841).

Untersuchungen über die nordische Wallthiere, 1849.

Professor Eschricht, who had devoted great attention to the anatomy, development, and life-history of the Cetacea, expressed, in his valuable memoir on *Platanista*, the opinion that Dr. Gray's *H. latifrons* was nothing more than an old male of the ordinary form[1]. This opinion called forth a long rejoinder from Gray[2], in which he endeavours to show that males and females of both forms have been met with, and moreover states that "he was assured by the fishermen who procured the head which he described and figured that it was that of a female gravid with young."

So convinced was Gray of the distinction, that in 1863 (see P. Z. S. 1863, p. 200) he constituted *H. latifrons* into a distinct genus called *Lagenocetus*, and retained it in this position in all his subsequent cetological writings.

Since the type specimen was described by Gray, not only several skulls but also complete skeletons have been met with of the larger form, a very fine specimen being mounted in the Copenhagen Museum and another at Caen. Although there is certainly nothing except size and the form of the maxillary crests to distinguish them from the more common form, there is so striking a difference in the shape of the skull, that Dr. Gray's opinion, backed by the various statements made by him regarding the age and sex of the different individuals recorded (all of which perhaps will not bear close investigation), has induced many zoologists to agreed with him, at all events as to the specific distinction, and to admit *H. latifrons* into the list of Cetaceous animals, sometimes as a doubtful and sometimes as a well-determined species. I had, in fact, myself done so in the article "Mammalia" written in the beginning of this year for the 'Encyclopædia Britannica,' being fortified in this opinion by some premature information derived from the same source as that which has now dispelled this view (as mentioned in a note to p. 395 of the present volume of our Proceedings), and especially because my friend the late Prof. Reinhardt, whose recent death is a great loss to this branch of zoology, had fully adopted Gray's view[3].

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[1] See the English translation in Ann. & Mag. Nat. Hist. ser. 2, ix. p. 281 (1852).

[2] *Ibid.* p. 407.

[3] He says:—"Eschricht meente, som bekjendt, at *Hyperoodon latifrons* kun var opstillet paa den ret gamle Han af den almindelige Døgling, *Hyperoodon rostratus*; men Gray's Art maa nu ansees for vel begrundet."—Vidensk. Selks. Skr. 5 Række, naturvidens. og math. Afd. 9, B. 1 (1869).

On the other hand, Gervais, in the 'Ostéographie des Cétacés,' written in conjunction with Van Beneden, firmly maintained the specific identity of the two forms, citing cases of intermediate structure of cranium between the typical form of *H. rostratus* and that of *H. latifrons*, and affirming that all the specimens referred to the former were either females or immature males.

The importance of solving such a question is perfectly evident. It is indeed a pressing need in Cetology, as involving such an important point in the life-history of so common a British species, and also because, although Captain Gray's discovery of the commercial value of *Hyperoodon*-oil may give us for a short time ample means for investigating the subject, it will before long, it is to be feared, place it altogether beyond our reach.

It was last year that this enterprising seaman, who has already done so much to increase our knowledge of the Northern Cetacea, especially by the interesting description he has given us of the natural position in the mouth and mode of action of the baleen of the Greenland Whale (see 'Land and Water,' 1st December 1877) turned his attention to Hyperoodons or "Bottlenoses," which had hitherto in their native haunts enjoyed a happy immunity from the attention paid by whalers to the more gigantic members of their order. Observing their frequency in the seas which he visited in the pursuit of the Greenland Whale, the seas lying to the east of Greenland, between Iceland and Spitzbergen (which, by the way, was the original seat of the Greenland Right-Whale fishery, before it was mostly transferred to Baffin's Bay), he harpooned several specimens and brought back their oil. This, upon analysis, as related in the following communication, proved to be very similar to that of the Sperm-Whale, and probably of equal value for the special purposes to which that now scarce material is put, and for which, I believe, no efficient substitute has been found. The presence of spermaceti also in the head of the *Hyperoodon*, which has been affirmed and denied by previous investigators, was fully confirmed by Captain Gray's observations.

Hearing that Captain Gray intended this year to devote himself exclusively to the capture of "Bottlenoses," I called his attention to the interest of the subject, and to the great opportunities which he would have for solving the disputed question of the difference or identity of the two alleged species, and requested him carefully to note the sex and appearance of all the individuals killed which might throw light upon the question. How completely Captain Gray has carried out this object will be seen by his own communication, which, besides giving us for the first time any idea of the external characters of the adult male *Hyperoodon* (an animal never previously figured or described), must cause *H. latifrons* to be henceforth erased from the list of species, and the genus *Lagenocetus* to be consigned to a similar fate.

Besides the notes, Captain Gray has brought home tangible evidence of the correctness of his observations in a series of skulls, of which that of an adult male has been presented to the Museum of the College of Surgeons, and that of a young male to the University of Cambridge. The skull of a fœtal male, which was being towed overboard for the purpose of cleansing, was unfortunately lost; but next year it may be hoped that Captain Gray will have an opportunity of still further contributing to our knowledge of this interesting subject.

The presence of spermaceti in the head of the *Hyperoodon*, though subsequently denied by other observers, was noticed in 1779 by Chemniz, who in his account of a male taken near Spitzbergen says, after speaking of the oil, "Ausserdem aber auch aus seinem Kopfe und den übrigen Theilen einen Anker desjenigen reinsten Oels, so den Namen Wallrath oder *Sperma ceti* führet, gesammlet"[1].

Postscript.—Since the above note was communicated to the Society, I have received a letter from my friend Mr. Robert Collett, of the Christiania Museum, giving some account of a specimen of *Hyperoodon latifrons* (as, according to the common belief, he names it) which was washed ashore at the Loffoden islands in April 1881[2]. He describes the head as perfectly quadrangular, just like a "Kuffert" (portmanteau) with rounded angles, and altogether more like that of a *Physeter* than an ordinary *Hyperoodon*, the anterior part of the forehead being perpendicular, and the rostrum scarcely projecting beyond it. The body was proportionally slender as compared with the large head. It will be seen that this description exactly corresponds with Captain Gray's sketches (figs. 1–5, p. 728). With regard to these drawings it is important to observe that, as they were not drawn to scale, the bodies appear shorter and stouter than they would if composed from exact measurements, the reason being that, in any long object when seen from a single point of view, the effects of perspective diminish the length much more than the breadth.

2. Notes on the Characters and Habits of the Bottlenose Whale (*Hyperoodon rostratus*). By David Gray, Commander of the Whaling Steamer 'Eclipse.' (Communicated by Prof. Flower, F.R.S., P.Z.S.)

[Received November 28, 1882.]

These Whales are occasionally met with immediately after leaving the Shetland Isles in March, and north across the ocean until the ice is reached, near the margin of which they are found in greatest numbers; but they are seldom seen amongst it.

Although it is not their nature to keep in amongst the ice, they like to frequent the open bays, for the shelter it gives them from the sea. Sometimes a point of ice overlaps them; it is only then that they are seen going out again towards the ocean. They are also to be met with from the entrance of Hudson's Straits and up Davis Straits, as far as 70° north lat., and down the east side round Cape

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[1] *Loc. cit.* p. 185.

[2] See "Meddelelser om Norges Pattedyrs i Aarene 1876–81," by R. Collett.